# General and Comparative Endocrinology

An International Journal

Editors-in-Chief
AUBREY GORBMAN
J. N. BALL

Published under the Auspices of the Division of Comparative Endocrinology of the American Society of Zoologists, and the European Society for Comparative Endocrinology

> Volume 65 1987



## ACADEMIC PRESS, INC.

San Diego Orlando New York Austin Boston
London Sydney Tokyo Toronto

## Copyright © 1987 by Academic Press, Inc. All Rights Reserved

No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopy, recording, or any information storage and retrieval system, without permission in writing from the copyright owner.

The appearance of the code at the bottom of the first page of an article in this journal indicates the copyright owner's consent that copies of the article may be made for personal or internal use, or for the personal or internal use of specific clients. This consent is given on the condition, however, that the copier pay the stated per copy fee through the Copyright Clearance Center, Inc. (27 Congress Street, Salem, Massachusetts 01970), for copying beyond that permitted by Sections 107 or 108 of the U.S. Copyright Law. This consent does not extend to other kinds of copying, such as copying for general distribution, for advertising or promotional purposes, for creating new collective works, or for resale. Copy fees for pre-1987 articles are as shown on the article title pages; if no fee code appears on the title page, the fee code is the same as for current articles.

0016-6480/87 \$1.50

MADE IN THE UNITED STATES OF AMERICA

### Contents of Volume 65

### Number 1, January 1987

MOHAMED E. EL HALAWANI, ORLAN M. YOUNGREN, JANET L. SILSBY, AND	
RICHARD E. PHILLIPS. Prolactin Release following Electrical Stimulation of	
the Brain in Female Turkeys (Meleagris gallopavo)	1
JP. WENIGER AND A. ZEIS. 17β-Estradiol Secretion by the Ovary of the Hypo-	
physectomized Chick Embryo	9
E. GORDON GRAU, CAROL-ANN FORD, LISA M. H. HELMS, STEVEN K. SHIMODA,	
AND IAN M. COOKE. Somatostatin and Altered Medium Osmotic Pressure	
Elicit Rapid Changes in Prolactin Release from the Rostral Pars Distalis of the	
Tilapia, Oreochromis mossambicus, in Vitro	12
J. E. THORPE, M. G. McConway, M. S. MILES, AND J. S. MUIR. Diel and Sea-	
sonal Changes in Resting Plasma Cortisol Levels in Juvenile Atlantic Salmon,	4.0
Salmo salar L	19
F. GRAF AND J. P. DELBECQUE. Ecdysteroid Titers during the Molt Cycle of Or-	22
chestia cavimana (Crustacea, Amphipoda)	23
S. HARVEY AND C. G. SCANES. Opiate Inhibition of Growth Hormone Secretion	34
in Young Chickens	34
PINA BELLUSSI. Prolactin Binding Sites in <i>Xenopus laevis</i> Tissues: Compar-	
ison between Normal and Dehydrated Animals	40
LISA M. H. HELMS, E. GORDON GRAU, STEVEN K. SHIMODA, RICHARD S. NI-	40
SHIOKA, AND HOWARD A. BERN. Studies on the Regulation of Growth Hor-	
mone Release from the Proximal Pars Distalis of Male Tilapia, Oreochromis	
mossambicus, in Vitro	48
ERNEST S. CHANG, MARILYN J. BRUCE, AND ROBERT W. NEWCOMB. Purification	
and Amino Acid Composition of a Peptide with Molt-Inhibiting Activity from	
the Lobster, Homarus americanus	56
R. A. WILLIAMSON AND T. F. DAVISON. Effect of Increased Circulating Cortico-	
sterone on Serum and Thyroidal Concentrations of Iodothyronines and the Re-	
sponses to Thyrotrophin in the Immature Fowl (Gallus domesticus)	65
S. K. LAM, S. HARVEY, AND T. R. HALL. Calcium Participation in Thyroid Func-	
tion in Fowl (Gallus domesticus)	73
LINDA D. BARBER, BRIDGET I. BAKER, JACQUELINE C. PENNY, AND ALEX N.	
EBERLE. Melanin Concentrating Hormone Inhibits the Release of αMSH from	
Teleost Pituitary Glands	79
PAR M. RASHEDI AND R. MARAUD. Secretion of the Anti-Müllerian Hormone by	07
the Gonads of Experimentally Sex Reversed Female Chick Embryos	87
S. HARVEY, S. HOSHINO, AND M. SUZUKI. Plasma Immunoreactive-Growth Hor-	
mone in Domestic Fowl: Measurement by Homologous and Heterologous Ra-	92
dioimmunoassays	92
KAZUMASA IKUTA, KATSUMI AIDA, NAOTO OKUMOTO, AND ISAO HANYU. Effects	99
of Sex Steroids on the Smoltification of Masu Salmon, <i>Oncorhynchus masou</i>	))
S. HARVEY AND T. R. HALL. Somatostatin-28(1-14) Immunoneutralization Stimulates Growth Hormone Secretion in Fowl	111
lates Growth Hormone Secretion in Powi	111

Treadwheel Exercise	117
SM. Ho, V. Lance, and M. Megaloudis. Plasma Sex-Steroid Binding Protein in a Seasonally Breeding Reptile, Alligator mississippiensis	121
H. KLANDORF, B. L. CLARKE, AND J. BROWN. Altered Glucagon Release in Biotin Deficiency	133
ROGER C. COCHRAN. Serum Androgens during the Annual Reproductive Cycle of the Male Mummichog, Fundulus heteroclitus	141
CRAIG V. SULLIVAN, DOUGLAS S. DARLING, AND WALTON W. DICKHOFF. Nuclear Receptors for L-Triiodothyronine in Trout Erythrocytes	149
BOOK REVIEW  The Biology of Crustacea, Vol. 9, Integument, Pigments and Hormonal Processes. Edited by D. E. Bliss and L. H. Mantel	161
IN MEMORIAM  Grace E. Pickford (1902–1986)	162
ERRATUM Volume 63, Number 2, August 1986: E. M. Plisetskaya, H. G. Pollack, J. B.	
Rouse, J. W. Hamilton, J. R. Kimmel, P. C. Andrews, and A. Gorbman, "Characterization of Coho Salmo ( <i>Oncorhynchus kisutch</i> ) Islet Somato-	
statins," pp. 252–263	166
Number 2, February 1987	
G. COLOMBO, G. GRANDI, A. ROMEO, G. GIOVANNINI, D. PELIZZOLA, L. CATOZZI, AND A. PIFFANELLI. Testis Cytological Structure, Plasma Sex Steroids, and Gonad Cytosol Free Steroid Receptors of Heterologous Gonadotropin (hCG)-	
Stimulated Silver Eel, Anguilla anguilla L	167
ceans: High Concentrations in Nephrops norvegicus  S. KAR AND D. R. NAIK. Ontogeny of the Hypothalamo-Neurohypophysial	179
N. HAROLD RICHMAN III AND WALDO S. ZAUGG. Effects of Cortisol and Growth Hormone on Osmoregulation in Pre- and Desmoltified Coho Salmon (Onco-	184
P. DEVICHE AND J. BALTHAZART. Effect of the Injection Solvent on Steroid Ac-	189
C. SALMON, Y. MIYASHITA, J. MARCHELIDON, ET Y. A. FONTAINE. Mise en évidence et propriétés des sites de liaison spécifique pour la gonadotropine de carpe dans des préparations membranaires d'ovaire d'Anguille (Anguille an	199
JACK ROSE, JAMES OLDFIELD, AND FREDRICK STORMSHAK Apparent Role of	203
Minteration and Profactin in Initiating Winter Fur Growth in Mink	010
Sanjay Singh and T. P. Singh. Seasonal Profiles of Sex Steroids in Blood Plasma and Ovarian Tissue of Clarias batrachus	212

MICHAEL C. MOORE AND CATHERINE A. MARLER. Effects of Testosterone Manipulations on Nonbreeding Season Territorial Aggression in Free-Living Male	
Lizards, Sceloporus jarrovi	225
Freshwater, Sex-Reversing Teleost Fish, <i>Monopterus albus</i> (Zuiew) JOHN D. BUNTIN AND ELAINE RUZYCKI. Characteristics of Prolactin Binding Sites	233
	243
Plasma Testosterone and Thyroxine in the Male Aspic Viper Vipera aspis L.,	254
aesthetized Fowl: Hypothalamic Participation	264
ration by Chromatofocusing	269
Fish	288
on Sodium Uptake by Isolated Perfused Gills of Callinectes sapidus	300
NAOKUNI TAKEDA, SHIN-ICHI OHTAKE, AND KANJI SUGIYAMA. Evidence for Neurosecretory Control of the Optic Gland in Terrestrial Pulmonates	306
DANIEL MAUREL, CHRISTIAN COUTANT, AND JEAN BOISSIN. Thyroid and Gonadal Regulation of Hair Growth during the Seasonal Molt in the Male European Badger, Meles meles L	317 328
Number 3, March 1987	
C. J. JOYNER, M. J. PEDDIE, AND T. G. TAYLOR. The Effect of Age on Egg Production in the Domestic Hen.	331
CRAIG V. SULLIVAN, ROBERT N. IWAMOTO, AND WALTON W. DICKHOFF. Thyroid Hormones in Blood Plasma of Developing Salmon Embryos  A. D. PICKERING, T. G. POTTINGER, AND J. P. SUMPTER. On the Use of Dexamethasone to Block the Pituitary-Interrenal Axis in the Brown Trout, Salmo	337
trutta I	346
PETER RONNER AND ANTONIO SCARPA. Secretagogues for Pancreatic Hormone Release in the Channel Catfish (Ictalurus punctatus)	354
P. FAVREL, A. VAN-WORMHOUDT, J. M. STUDLER, AND C. BELLON. Immuno-chemical and Biochemical Characterization of Gastrin/Cholecystokinin-like Peptides in <i>Palaemon serratus</i> (Crustacea Decapoda): Intermolt Variations.	363
JAMES DUSTON AND NIALL BROMAGE. Constant Photoperiod Regimes and the Entrainment of the Annual Cycle of Reproduction in the Female Rainbow Trout	
(Salmo gairdneri)	373
tivity of Position-8-Substituted Analogs of Mammalian Gonadotropin-Releasing Hormone (mGnRH) and Chicken and Lamprey Gonadotropin-Releasing Hor-	
mones in Goldfish	385

V. A. KUPWADE AND S. K. SAIDAPUR. Effect of Dexamethasone and ACTH on Oocyte Growth and Recruitment in the Frog Rana cyanophlyctis during the Prebreeding Vitellogenic Phase	394
M. PARMENTIER, M. GHYSENS, F. RYPENS, D. E. M. LAWSON, J. L. PASTEELS, AND R. POCHET. Calbindin in Vertebrate Classes: Immunohistochemical Localization and Western Blot Analysis	399
Frank M. Perez, Sasha Malamed, and Colin G. Scanes. Growth Hormone Secretion from Chicken Adenohypophyseal Cells in Primary Culture: Effects of Human Pancreatic Growth Hormone-Releasing Factor, Thyrotropin-Releasing	
Hormone, and Somatostatin on Growth Hormone Release	408
ICHIRO KAWAZOE, HIROSHI KAWAUCHI, TETSUYA HIRANO, AND NOBUKO NAITO. Characterization of Melanin Concentrating Hormone in Teleost Hypo-	413
thalamus	423
COLETTE FERAL, SOLANGE LE GALL, MARIE-CHRISTINE MARTIN, AND CATHERINE LENGRONNE. The Neuroendocrine Mechanism Responsible for Sexual Inversion of the Gonad in the Protandrous Hermaphroditic Molluse, Crepidula forni-	
W. J. A. G. DICTUS, M. DE JONG-BRINK, AND H. H. BOER. A Neuropeptide (Calfluxin) Is Involved in the Influx of Calcium into Mitochondria of the Albumen	432
Gland of the Freshwater Snail Lymnaea stagnalis  B. B. P. Gupta, C. Haldar-Misra, M. Ghosh, and J. P. Thapliyal. Effect of Melatonin on Gonads, Body Weight, and Luteinizing Hormone (LH) Dependent	439
Coloration of the Indian Finch, Lal munia (Estrilda amandava)  M. LKHIDER, R. MARCEL, ET G. TRAMU. Etablissement d'une carte des neurones du cerveau d'Eisenia fetida (Annélide, Oligochète) contenant des substances	451
MARCO TRAUB, GERD GELLISSEN, AND KLAUS-DIETER SPINDLER. 20 (OH) Ecdy-sone-Induced Transition from Intermolt to Premolt Protein Biosynthesis Pat-	457
MITSUYO KISHIDA, TETSUYA HIRANO, JUNKO KUBOTA, SANAE HASEGAWA, HIRANO, KAZUO YAMAGUCHI, AND KUNIKATSU SHIRAHATA. ISOla-	469
OUAFAE BEN BRAHIM, JACQUELINE MESNARD, AND JACQUES HOURDRY. Hormonal Control of the Intestinal Brush Border Enzyme Activities in Developing Anuran Amphibians. II. Effects of Glucocorticoids and Insulin during Experi-	478
mental Metamorphosis	489
BOOK REVIEW	496
ANNOUNCEMENT	501
AUTHOR INDEX FOR VOLUME 65	
The Subject Index for Volume 65 will appear in the December 1987 issue as part cumulative index for the year 1987.	of a